Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Parts 1, 2, 22, 24, 27, 90 and 95 of the Commission's Rules to Improve Wireless Coverage Through the Use of Signal Boosters	)	WT Docket No. 10-4
	)	

REPLY COMMENTS ON NOTICE OF PROPOSED RULEMAKING

Bird Technologies Group ("BTG"), consisting of Bird® Electronic Corporation and TXRX Systems Inc. ("TX RX"), pursuant to the Commission's Notice of Proposed Rulemaking ("NPRM") of April 6, 2011[1], hereby respectfully submits its reply comments in the above-referenced proceeding.

Company Background

Bird Technologies Group is a global innovative supplier of RF products, systems, services and educational solutions. Bird specializes in developing and manufacturing products that serve both the management and measurement of radio frequency signals. TX RX has established itself as a leader in the design and manufacture of signal boosters, tower top amplifiers, transmitter and receiver multicoupler systems, duplexers, cavity filters, and a vast range of RF components primarily serving the public safety market where reliable, mission critical systems provide life saving communication.

TX RX, with more than 30 years experience serving critical Public Safety needs, has earned an unrivaled reputation for delivering high quality, reliable systems that enhance and extend the range of radio communications to basements, subways, high-rise building and other locations where obstacles challenge life saving communications. TX RX Systems is the supplier of choice to major radio system OEMs in North America. The equipment designed and manufactured by TX RX is the standard for interference mitigation and high-performance in many small, medium, and large enterprise communications systems as well as mission-critical, agency-wide, county, city and statewide communication systems. TX RX's resume of projects

[1] FCC 11-53, released April 6, 2011

includes the New York City Transit System, Hoover Dam, Department of Homeland Security, State of Pennsylvania, Washington MTA, University Health Care System (NC), Los Angeles MTA, Los Angeles Detention Center and Harbor, Disney, Cook County, Coors Brewery and many others.

TX RX is a leader in the specialized field of signal booster design and manufacturing and has the distinction of being the first American manufacturer that offered complete, fully integrated signal booster systems. Since its deployment in 1980, the first TX RX signal booster system has provided uninterrupted radio service deep inside a coal mine in the Midwest. Today, TX RX has thousands of units in use around the world as a vital part of two-way radio, paging, data transmission, telemetry and control systems operating on frequencies from 132 to 960 MHz. Applications include communication systems for major international airports, high-rise buildings, subway systems, hydroelectric dams, copper and coal mines, aircraft carriers, nuclear reactor containment buildings, and the tunnel under the English Channel.

Summary

BTG was pleased to see the ideas and discussion that the Commission's NPRM brought forward. After reading the comments of others regarding the Commission's NPRM, BTG would like to clarify and reiterate some of its previous points. BTG still maintains that the NPRM was a step in the right direction towards addressing the interference that results from incorrect use of signal boosters. Below we will focus on some of the largest sources of potential interference and proposed solutions.

Licensee Coordination

Many of the comments made it clear that the Commission's proposed rules in Part 95, Subpart M may not be clear enough in their requirement for users of signal boosters to coordinate their actions with the licensee. It has always been BTG's position that the best way to avoid interference is for signal boosters to be installed by or in coordination with the licensee. Not doing so will certainly lead to more interference in general and will cause problems with E911 location services, as others have pointed out.[2] To this purpose, BTG agrees with the

[2] TruePosition Comments, filed July 25, 2011, pages 2-7

comments of the DAS Forum,[3] that the Commission should clarify in its proposed rules what constitutes coordination with the licensee, including timelines for that coordination to take place. The user simply sending the licensee a letter stating they are installing a signal booster should not constitute coordination.

Use of Class B Signal Boosters

As stated previously,[4] in BTG's experience, we have found that in almost all instances, interference has been caused by poorly installed or poorly designed (Class A and Class B) signal boosters. This fact has been backed up by many of the commenters here.[5] [6] In fact, several of the commenters have stated that they have installed many Part 90 Class B signal boosters in both confined and open areas and never had any interference issues.[7] [8] [9]

The issues of interference we have seen from signal boosters have been primarily between one band and an adjacent band, in particular ESMR boosters causing interference to public safety frequencies. Other commenters have expressed this observation and the need for high quality filtering as well.[10] [11] Thus, BTG continues to support a requirement that a signal booster should reject frequencies 1MHz or more above and below the frequency band it is licensed for by at least 35dB. As a particular example, SMR signal boosters that amplify the entire 18MHz spectrum at 806-824/851-869MHz (which includes both public safety frequencies and subscriber services) should not be allowed.

These additional requirements should alleviate just about all interference issues that have resulted from Class B signal boosters in the past. Thus, additional restrictions on the use of Class B signal boosters should be unnecessary and public safety and industry users would still have access to the more affordable option for enhanced wireless coverage that Class B signal boosters provide. What's more, when they don't need the extra performance of a Class A signal

[3] DAS Forum NPRM Comments, filed July 25, 2011, pages 8-9
[4] BTG NPRM Comments, filed July 25, 2011, page 3
[5] Greg Glen NPRM Comments, filed July 25, 2011, page 4
[6] Jack Daniel NPRM Comments, filed July 25, 2011, page 10
[7] NAM/MRFAC NPRM Comments, filed July 25, 2011, pages 3-4
[8] Public Safety Licenses NPRM Comments, filed July 25, 2011, pages 3-4
[9] USA Mobility NPRM Comments, filed July 25, 2011, page 9
[10] Greg Glen NPRM Comments, filed July 25, 2011, pages 5-10
[11] Public Safety Licenses Comments, filed July 25, 2011, page 2

booster, they will be able to take advantage of the interoperability benefits that Class B signal boosters provide, as Jack Daniel pointed out in his comments.[12]

For these reasons, BTG proposes that Class B signal boosters should continue to be permitted for use on the uplink (the return path to the base-station) and in non-confined areas. Furthermore, this should be specifically clarified in the rules, as we suggested in our previous comments.[13]

Shutdown Requirements Should Not Apply to Public Safety Signal Boosters

As BTG suggested before,[14] the shutdown requirements proposed in Part 95 Subpart M Section 95.1623[15] should not apply to Part 90 public safety signal boosters. The Telecommunications Industry Association agrees and in their comments they express concern that automatically shutting down signal boosters could jeopardize communications for emergency personnel.[16]

The land mobile radio systems that public safety typically operates on are much different than subscriber based systems. These public safety systems can easily fool oscillation detection circuits due to high powered mobile units and signals that may come and go as users key up their radios. This can cause the signal booster oscillation detection circuit to incorrectly determine the signal booster is oscillating and shut it down, removing lifesaving communication from first responders.

Due to this possibility of boosters shutting down erroneously and the importance of emergency personnel having uninterrupted communication, (even if marginal due to intermittent oscillation) the shutdown requirements of Section 95.1623 should not apply to Part 90 public safety signal boosters. The best way to avoid interference caused by oscillation is through professional installation of signal boosters. This professional installation is the norm for Part 90 public safety systems.

[12] Jack Daniel NPRM Comments, filed July 25, 2011, page 7
[13] BTG NPRM Comments, filed July 25, 2011, page 4
[14] BTG NPRM Comments, filed July 25, 2011, page 8
[15] FCC 11-53, released April 6, 2011, page 45.
[16] Telecommunication Industry Association NPRM Comments, filed July 25, 2011, page 3

Suggested Rule Changes

In Jack Daniel's comments regarding the Commission's NPRM, he suggested changes to the language in Section 90.219 that relate to some of the above mentioned issues.[17] BTG supports these suggestions and urges Commission to adopt the language suggested by Mr. Daniel. The only exception BTG would make is to change the suggested requirements in 90.219(b) and 90.219(c) to "attenuate all emissions +/-1 MHz from the upper and lower edges of each 3dB passband by a minimum of *35dB*," instead of the 60dB suggested by Mr. Daniel. BTG feels this is still a huge step forward in eliminating interference between frequency bands but not so onerous as to substantially drive up the cost and size of signal boosters.

Conclusion

The Commission's proposed rules, with the suggested additions and changes, will go a long way towards reducing potential interference, while still providing for economical coverage enhancement solutions. Bird Technologies Group respectfully asks that the Commission take our views expressed above into account when drafting final rules in this proceeding.

Respectfully submitted,
BIRD TECHNOLOGIES GROUP

[17] Jack Daniel NPRM Comments, filed July 25, 2011, page 20